The Role of Self-Control in Confronting One's Own Sexist Beliefs

THESIS

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Abstract

Partially due to sexism, women hold significantly fewer STEM jobs than men. To address their own sexism, people first must determine whether they are sexist. However, egalitarians could experience a self-control conflict (conflict between long-term and short-term goals) when an opportunity to take a sexism assessment occurs. On one hand, sexism assessments align with egalitarians' long-term goals to address potential sexism. On the other, potential negative feedback from sexism assessments opposes egalitarians' short-term protective goals to *view* themselves as egalitarian. Previous work on construal level (construing something abstractly versus concretely) demonstrates that high-level construal (abstract thinking) promotes long-term goals over short-term goals whereas low-level construal (concrete thinking) promotes the opposite (Fujita & Carnevale, 2012). I predict high-level construal, compared to low-level construal, will promote egalitarians taking a sexism assessment. To test my hypothesis, 405 Mechanical Turk participants were randomly assigned to a high or low-level construal condition and completed a category/exemplar task (Fujita et al., 2006), which directly manipulated construal level. Next, participants reported the extent to which they endorse egalitarianism and their interest in taking a sexism assessment. The majority of participants reported moderately high egalitarian values (M= 4.60 on a six-point scale), suggesting even "low" egalitarians (1 *SD* below the mean) value equality to some extent. I found a significant interaction between construal level and egalitarianism. Counter to predictions, construal level did not affect high egalitarians (+1 *SD*, those initially predicted to experience conflict). However, high-level more so than low-level construal increased low egalitarians' (-1 *SD*) interest in taking a sexism assessment. My results suggest that construal level encourages those relatively low in egalitarianism to take a sexism assessment. High egalitarians might possess so much motivation

to address potential sexism they do not experience conflict with wanting to protect their self. This research suggests utilizing construal level for future interventions where individuals experience an opportunity to receive feedback on their own prejudice, such as sexism.

Keywords: self-control conflict, construal-level, sexism, prejudice

Introduction

Despite women's recent advances in historically male-dominated fields, such as law and medicine, women remain underrepresented in science, technology, engineering, and mathematics (STEM; *Bachelor's Degrees*, 2009). Although women hold 50% of jobs in the US, they possess only 26% of STEM positions (Landivar, 2013). Even in school, women opt out of STEM majors at disproportional rates to men (*Rising Above*, 2007). Further, when women pursue STEM degrees, they are less likely than men to apply and be hired in STEM fields (*Women, Minorities*, 2013; Landivar, 2013). Ultimately, gender discrepancies in STEM restrict women's career opportunities, limit women's access to high-paying jobs, and impede women's collective economic potential (*Rising Above*, 2007; Bystydzienski & Bird, 2006). Additionally, STEM fields miss out on brilliant potential workers that benefit society.

Sexism in STEM

Although multiple factors contribute to gender discrepancies in STEM (Shapiro & Sax, 2011), the present research addresses one of these factors: sexism in STEM environments. Women entering STEM fields often confront a "chilly climate" where they feel unwelcome (Walton, Logel, Peach, Spencer, & Zanna, 2015). This climate arises from negative stereotypes regarding women's abilities in STEM (Appel & Kronberger, 2012; Cejka & Eagly 1999; Logel et al., 2009; Thoman, Smith, Brown, Chase, & Lee, 2013). These stereotypes can negatively impact women's performance, self-perceptions, and interest in stereotypically masculine fields, even when these women possess unique skills and advanced training (Eccles 1987; Eccles, Jacobs, & Harold, 1990; Steele 1997; Tenenbaum & Leaper 2003; Cheryan, Plaut, Davies, & Steele, 2009). Therefore, in order to address sexism in STEM fields, researchers must understand

ways to help individuals overcome gender stereotypes.

Even people who do not endorse sexist beliefs can contribute to sexist gender stereotypes. As such, targeting individuals who endorse gender equality, but continue to exhibit sexism, could be beneficial. In particular, stereotypes about women in STEM can take two forms: (a) explicit endorsement of the stereotype that women perform poorly on STEM-related tasks and/or (b) negative automatic associations between women and STEM. These automatic associations refer to how quickly people are able to mentally pair men versus women with STEM. In order to investigate negative gender stereotypes, past research has used measures such as the Implicit Association Test (IAT) to observe people's automatic category-based associations (Greenwald, McGhee, & Schwartz, 1998; Greenwald & Nosek, 2001; Banaji, Roediger, Nairne, Neath, & Surprenant, 2001; Fazio, 2001). The more frequently individuals mentally pair men with STEM and women with not-STEM the stronger these associations become in memory (Fazio & Olson, 2014). When an association becomes strong, it can be automatically retrieved from memory, making it more likely to impact judgments, decision-making, and behavior (Fazio & Olson, 2014). Therefore, even individuals who do not endorse negative gender stereotypes can exhibit sexism.

According to the MODE Model, stereotypes can impact judgment and behavior through two processes: deliberate and spontaneous (Fazio & Olson, 2014). Deliberate processing occurs when individuals reflect on personal attitudes and creates a behavioral plan based on endorsed beliefs (Ajzen, 1991; Ajzen & Fishbein, 1980). Therefore, if individuals personally endorse gender stereotypes they can thoughtfully judge and behave in ways consistent with these stereotypes. Should individuals not endorse stereotypic beliefs about women in STEM, they can thoughtfully avoid using the stereotype. Specifically an individual must have sufficient

motivation and opportunity (time and mental resources) to avoid gender stereotypes (Fazio & Olson, 2014). When a person lacks motivation or opportunity, spontaneous processing occurs. Unlike deliberative processing, during spontaneous processing, automatic associations, such as stereotypes, guide judgments and behaviors regardless of the individual's personal endorsement (Fazio & Olson, 2014). Therefore, gender stereotypes are more likely to guide behavior and judgments when individuals deliberately endorse gender stereotypes or lack the motivation and ability to override automatic associations. At this point in time, the majority of people do not explicitly endorse stereotypes about women in STEM (Schmader, Johns, & Barquissau, 2004; Hyde, Fennema, Ryan, Frost, & Hopp, 1990), but many people associate men and science quicker and with more ease than women and science (Nosek, Greenwald, & Banaji, 2006; Nosek et al., 2007). Therefore, individuals who personally endorse gender stereotypes and individuals who do not have sufficient opportunity or motivation to overcome stereotypes can contribute to sexism.

Targeting Egalitarians

One approach to reducing gender bias in STEM fields would be to target explicitly sexist individuals. However, even individuals who are motivated to correct for gender bias, can still be guided by automatic gender-science associations when they do not have enough opportunity (time, cognitive load). It's not hard to imagine that daily life would often result in situations in which employers or employees in a STEM field would not have sufficient cognitive resources to correct for their gender biases. People on a hiring committee may be under cognitive load, trying to keep track of all of their candidates. Project managers may be distracted, worrying about all of the tasks that they need to accomplish. Co-workers may be preoccupied with drama in their personal lives. Therefore, even individuals who explicitly endorse equality can perpetuate

negative gender stereotypes. Additionally, egalitarians that exhibit sexism could be particularly motivated to reduce their prejudice. Given the prevalence of automatic bias against women in STEM, it would be particularly beneficial to intervene among individuals who already possess motivation to behave in non-prejudiced ways toward women in STEM.

Self-Control Conflict

In order to address their own gender biases, egalitarians must be willing to put their beliefs about equality to the test. They must first find out if they are biased in order to correct for it. However, egalitarians may be particularly unwilling to test their own gender bias. The very fact that they endorse equality may motivate them to view themselves as non-prejudiced, preventing them from testing any automatic gender bias they might possess. As such, opportunities for an assessment to evaluate their gender bias could result in a self-control conflict (Belding, Naufel, & Fujita, 2015; Trope & Neter, 1994). Self-control conflicts are characterized by two competing goals: one short-term and one long-term (Trope & Neter, 1994). For egalitarians, taking an assessment that could demonstrate that they are sexist could be psychologically threatening to the belief that they perceive and treat everyone equally. As such, egalitarians maintain a short-term goal of protecting a positive view of themselves as non-sexists. On the other hand, egalitarians should be motivated to take an assessment to evaluate their sexism so they can correct for any they might possess, consistent with their long-term goal to not use gender stereotypes. As such, egalitarians likely experience a self-control conflict between competing short- and long-term goals when they have the opportunity to take an assessment of their potential gender bias. Therefore, investigating how egalitarians respond to opportunities to participate in sexism assessments is crucial for future interventions within STEM fields.

Construal-Level Theory (CLT)

Previous work has demonstrated that when people are confronted with a self-control conflict such as the one described above, construal level can affect which motivation they prioritize (Fujita, Trope, Liberman & Levin-Sagi, 2006). Informed by Construal Level Theory, construal level is defined as the way in which information is subjectively represented or construed (Trope & Liberman, 2010). One main component of CLT is psychological distance. For example, people tend to engage in high-level construal through cognitive abstraction in order to represent distant events or long-term goals. On the other hand, people tend-to engage in low-level construal through consideration of concrete details in order to represent proximal events or short-term goals (Belding, Naufel, & Fujita, 2015). Therefore, individuals in high-level construal are more likely to prioritize long-term goals, whereas individuals in low-level construal are more likely to prioritize short-term goals (Fujita, 2012; Trope & Liberman, 2010). To test whether egalitarians experience a self-control conflict when confronted with an opportunity to take a sexism assessment, I will examine whether egalitarians are more willing to participate in a sexism assessment in high-level construal, compared to low-level construal. In particular, egalitarians in high-level construal should construe feedback as helpful to correcting possible gender bias and promoting long-term egalitarian goals. On the other hand, egalitarians in low-level construal should construe feedback regarding sexism as possibly threatening to egalitarian identity and self-esteem. If participants demonstrate sensitivity to construal level, it would be consistent with the possibility of negative feedback presents a self-control conflict.

Overview of current research

The current work tests the hypothesis that egalitarians experience a self-control conflict when confronted with the opportunity to take a sexism assessment. To document the presence of

a self-control conflict, I examined the effect of construal level on participants' choice to take a sexism assessment. If participants prefer receiving feedback in high-level construal, rather than in low-level construal, this would indicate the presence of a self-control conflict. Ultimately, this would inform future research and interventions to address stereotypes in STEM fields.

Method

Sample

Four hundred and five Mechanical Turk workers participated in the study and were paid one dollar after completion of the thirty-minute study. The sample was made up of 53.3% women, 46.2% men and 0.2% transgender or non-binary individuals. Participants ranged from age 18-73 years old, where 46.2% had graduated from college, 32.8% completed some college, 11.6% graduated high school, 9.1% had graduated from professional school and 0.2% had some high school experience. The majority of participants identified as White, 84.4%, 8.4% identified as Black, 6.2% Asian or Pacific Islander, 3.5% Biracial and 0.2% Native American. The study was run shortly after the 2016 presidential election and 50.1% of participants voted for Hillary Clinton/Time Kaine, 29.1% Donald Trump/Mike Pence, 5.9% Gary Jonhson/Bill Weld, 3% Jill Stein, Ajamu Baraka, 1% write-in, and 10.9% did not vote or could not vote.

Design

I employed a two cell-between subject design in which I manipulated construal level by randomly assigning participants to either the high or low-level construal condition. After completing the construal level manipulation, participants received a message about sexism in STEM fields and were informed of the opportunity to take an assessment of their sexism. The sexism assessment was made up for the purpose of the study and was presented as the first step

to address sexism, specifically for STEM fields. Finally, participants responded to various items that assessed their own sexism, egalitarian values, and filler questions.

Procedure

Mechanical Turk workers read that the purpose of the study was to examine the psychology of people's opinions and thoughts. First, participants completed the category-exemplar task, a manipulation of construal level, presented as a pre-survey mind-clearing task.

After completing the construal-level manipulation, participants read about historically low numbers of women working in STEM fields. Participants read about a newly developed assessment described as highly "accurate, diagnostic and have been given outstanding reviews by expert psychologists" that measured individual's levels of sexism towards women in STEM fields. Next, participants completed a variety of scales assessing interest in taking the sexism assessment and receiving the results of their assessment. Participants then chose whether they would like to take the sexism assessment.

Finally, participants completed a variety of scales that measured sexism, egalitarian values, and as well as some filler items. Egalitarian values were measured with the Universalism scale from the Schwartz Value Survey (Schwartz, 1994; Lindeman & Verkasalo, 2005; Schwartz, 2012). Sexism was measured with the Ambivalent-Sexism Inventory (Glick & Fiske, 1996).

Manipulations

Construal-level. Construal Level was manipulated through a category exemplar task (Fujita, Trope, Liberman & Levin-Sagi, 2006). When individuals engage in superordinate categorization, this cognitive process is associated with high-level construal. Conversely, subordinate categorization is a process that is associated with low-level construal (Fujita, Trope,

Liberman & Levin-Sagi, 2006). Participants were presented with 30 words, such as *actor*, *beer* and, *coin*. Those in a high-level construal condition were instructed to generate superordinate category levels by answering the question, "_____ is an example of what?" Participants were given the example, "A SKYSCRAPER is an example of a building". In the low-level construal condition, participants were instructed to generate exemplars by answering the question, "An example of _____ is what?" For instance, "An example of a SKYSCRAPER is The Empire State Building" (Fujita, Trope, Liberman & Levin-Sagi, 2006).

Measures

Interest in assessment. Interest in the sexism assessment was measured with three items, using a 9-point scale, anchored with "not at all" to "very much." The items were: (a) This assessment will be available to Mechanical Turk workers next week. How much would you be interested in taking this new highly accurate sexism assessment? (b) To what extent are you interested in receiving your sexism score from this assessment? (c) If we sent you a link to the sexism assessment, how likely would you be to take it? The average score was calculated across these three items in order to create a continuous interest measure in the sexism assessment.

Choice to take assessment. After the third continuous measure, participants chose whether they wanted to take the sexism assessment. The item read, "We would now like you to make a choice about whether you would like to take the sexism assessment or not. If you choose, yes, we will send you a link to the sexism assessment when it is available next week. Would you like to take the new highly accurate sexism assessment?" The items were coded as followed: 1 = yes, 0 = no.

Universalism. Participants responded to the following prompt: "Next we will describe several people. We would like you to indicate how similar you are to each of these people". This

task was adapted from the Schwartz Value Survey (Schwartz, 2012; Lindeman & Verkasalo, 2005; Schwartz, 1994), and described individuals who embodied universalism values. Universalism has three main components, described as broad-minded, social justice oriented, and valuing equality (Schwartz, 1994). More specifically, Schwartz defines universalism as, " understanding, appreciation, tolerance, and protection for the welfare of *all* people and for nature" (Schwartz, 1994). For example; one of the items reads, "They think it is important that every person in the world be treated equally. They want justice for everybody, even for people they don't know". These items were measured on a 6-point scale (1 = *very much like me*, 6 = *not like me at all*). Universalism scores were reverse coded during analysis for higher scores to correspond with higher levels of universalism (1 = low in universalism, 6 = high in universalism).

Ambivalent sexism. Ambivalent sexism was measured with a 22 item 7-point scale adapted from researchers Glick & Fiske in 1996. The Ambivalent Inventory (ASI) measured two types of sexist attitudes towards women: benevolent sexism and hostile sexism (Glick & Fiske, 1996). Hostile sexism measured traditional negative stereotypes towards women (Glick & Fiske, 1996). For example, a hostile sexism item read, "Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for 'equality'". Another hostile sexism item included, "Most women interpret innocent remarks or acts as being sexist." Benevolent sexism measured stereotypes towards women that appear subjectively positive, although restrict women to stereotypically submissive roles (Glick & Fiske, 1996). A benevolent sexism item read, "No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman". Another example included, "Women should be cherished and protected by men." Individuals were categorized based on

scores as ambivalent sexists (high in hostile and benevolent sexism) or nonsexist (low in hostile and benevolent sexism). The ASI, which captured positive and negative stereotypes towards women, measured a variety of automatic associations that could contribute to sexism in STEM fields.

Perception of Sexism. Towards the end of the study, participants answered two questions measuring the perception of their own sexism. The first question stated, "How likely do you think it is that you possess some sexism?" where participants responded on a 9-point scale, (1= not at all likely, 9 = "very likely). The second question stated, "How much sexism do you think you possess?" and participants responded on a 9-point scale, (1 = not sexism at all, 9= a large amount of sexism). The two questions were averaged to create a final Perception of Sexism score, where the higher the score the more sexism the participant perceived they possessed.

Results

Universalism

In general, the sample was quite high in egalitarianism (M= 4.59, SD = 1.15). Approximately 56 participants, making up 13.8% of the sample, scored the highest universalism score. As such, skewed results suggest even "low" egalitarians (1 *SD* below the mean) value equality to some extent (Figure 1).

Means and standard deviations for all variables of interest are reported in Table 1.

Continuous Interest

In order to analyze whether egalitarians experienced a self-control conflict, I ran a regression with construal-level, universalism, and their interaction predicting the continuous measure of interest in the sexism assessment (M = 6.89, SD = 2.51). There was no significant

main effect of construal level on continuous interest b= .19, t (401) = 1.54, p = .12. There was a main effect of universalism on continuous interest, b= .40, t (401) = 3.73, p = .0002. However, this was qualified by a significant interaction between construal level and universalism on continuous interest in taking the sexism assessment b= -.30, t (401) = -2.79, p = .005 (Figure 2). Counter to predictions, construal level did not have an effect on those high in egalitarianism, potentially because they were so high in motivation to take the assessment (b = -.15, t (401) = -.89, p =. 37. Individuals high in egalitarianism were highly interested in the assessment in both construal level conditions. However, high-level more low-level construal significantly increased low egalitarians' interest in taking a sexism assessment, b = .52, t (401) = 3.06, p =.002. Therefore, my results suggest that those who were relatively low in egalitarianism experienced a self-control conflict. High egalitarians might possess so much motivation to address potential sexism they do not experience conflict with wanting to protect themselves. Conversely, because the overall levels of universalism were so high in my study, those "low" in egalitarianism may have been somewhat motivated to take the sexism assessment, but their egalitarianism motivation may have been low enough to conflict with their self-protection motivation.

Dichotomous Choice

I ran the same analysis predicting participant's choice to take the sexism assessment. There was no significant interaction between construal level and universalism on dichotomous choice to take the sexism assessment b= -.11, t (401) = -.98, p = .32. The main effect of Universalism on dichotomous choice was not significant either, b= .16, t (401) = 1.53, p = .12. Similarly Construal Level on dichotomous choice was also not significant, b= .01, t (401) = .09, p = .92. Lastly, construal level was shown to not increase likelihood that a low egalitarian b= .13,

t (401) = .78, *p* = .43, or high egalitarian *b*= -.10, *t* (401) = -.59, *p* = .55, choose to take the sexism assessment.

Ambivalent Sexism

In this study, results demonstrated that Universalism scores were negatively correlated with ambivalent sexism, *r*(403) = .01, *p* = -.424.

Perception of Sexism

Additionally, I found a significant correlation between Perception of Sexism and universalism, *r*(405) =.313, *p* =.00.

Table 1. Means, standard deviation, and correlations between measures.

	M	*SD*	*1*	*2*	*3*	4
1. Universalism	4.59	1.15				
2. Interest	6.89	2.51	.198**			
3. Choice	.80	.40	.085	.723**		
4. Sexism	2.99	1.35	-.424**	-.008	-.013	
5. Perception	4.81	1.83	-.275**	.158**	.184**	.313**

** *Correlation Significant at the 0.01 level (2-tailed).*

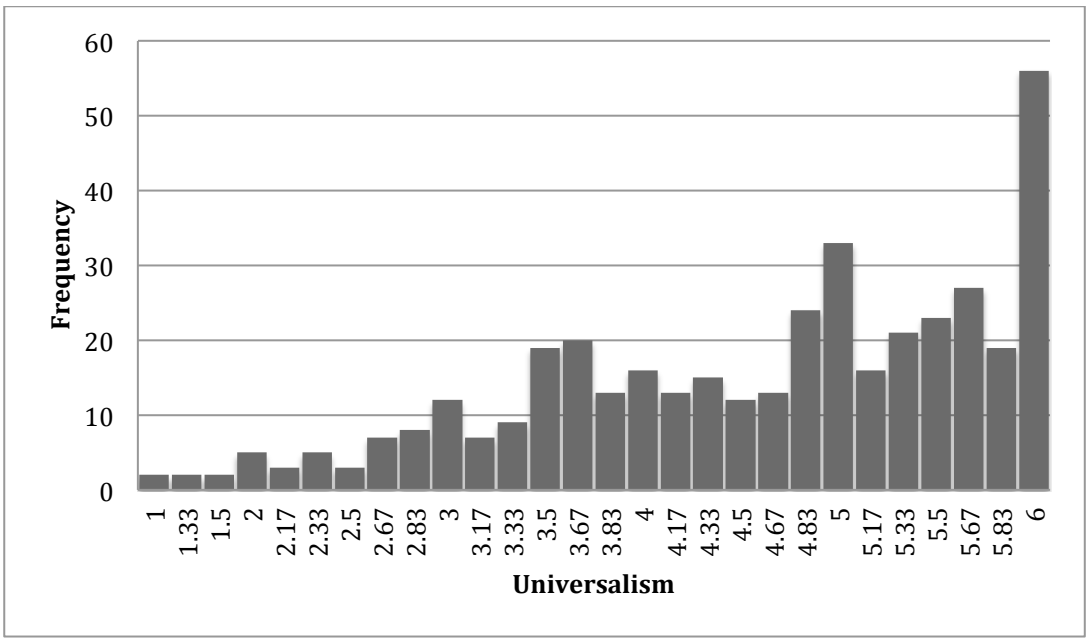

Figure 1. Universalism Frequency Histogram

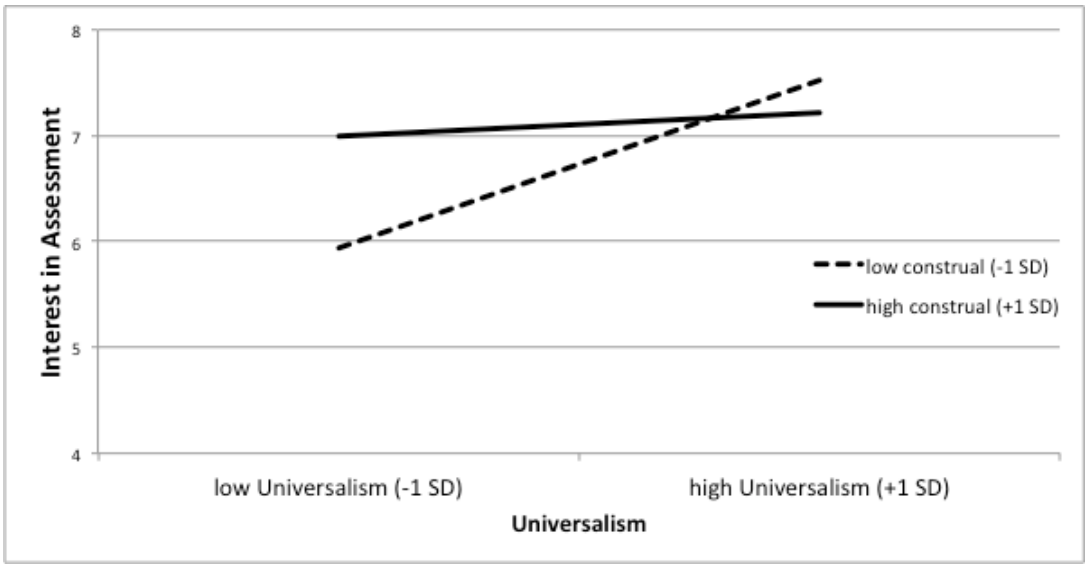

Figure 2. Interaction between Construal-Level and Universalism on Continuous Interest

Discussion

Counter to predictions, the current research demonstrated that construal level affected those relatively low in egalitarianism rather than those high in egalitarianism. Those high in egalitarianism reported a high desire to take the sexism assessment in both construal level conditions. Thus, they were so motivated to take the assessment that they seem to overcome any potential threat associated with taking the assessment. However, high-level construal promoted interest in a sexism assessment among those relatively low in egalitarianism. The fact that high level construal promoted interest in the assessment suggests that those relatively low in egalitarianism experienced a conflicted between wanting to take the assessment and wanting to dismiss it. Therefore, current research demonstrated that those relatively low in egalitarianism, rather than those high in egalitarianism, experienced a self-control conflict when presented with the opportunity to take a sexism assessment.

One reason high egalitarians may have demonstrated different results than low egalitarians could relate to sexism. In this study, results demonstrated that Universalism scores were negatively correlated with ambivalent sexism. Additionally, there was a significant correlation between how sexist people thought they were and universalism. Participants high in egalitarianism in general were less sexist and perceived themselves as less sexist. Therefore, individuals high in egalitarianism, low in sexism and had some perception of their low sexism would not likely feel threatened by a sexism assessment. As such, a sexism assessment would not evoke a self-control conflict for high egalitarians. Conversely, those who are relatively low in egalitarianism might have the sense that they are sexist so taking the assessment is actually threatening, creating a conflict between wanting to believe that they aren't sexist and wanting to actually not be sexist. Therefore, the lack of a self-control conflict among high egalitarians could

occur due to awareness of low sexism. As such, individuals high in sexism, high in perceived sexism, and low in egalitarian values, experienced the largest impact of construal level.

External factor: 2016 Presidential election

Another explanation for the results could come from the timing of the study. The 2016 presidential election occurred promptly before I ran this study. During the election, gender, sexism, and policy related to women's rights were highly salient, and many people concerned about women's issues were disappointed by the results of the election, resulting in increased concern and activism around women's issues in the wake of the election. I suggest that the election increased general motivation not to appear and be sexist, polarizing personal goals for egalitarians. As such, this polarizing effect could have lead egalitarians' long-term goals to not be sexist to vastly outweigh short-term concerns about the potential pain of finding out that they are sexist. Therefore, I encourage future research to replicate these results during a time period where polarizing politics are not as salient as the 2016 presidential election or to experimentally create conditions that reflect heightened levels of motivation and more normal levels of motivations.

Limitations

A variety of limitations were present in the study, which have the potential to impact results. One limitation concerns the Universalism scale, which resulted in a non-normal distribution. One reason high egalitarians demonstrated different results than low egalitarians could relate to the item that measured egalitarianism. In past research, Universalism Scale by Schwartz (1994), which I used to measure egalitarianism, was typically used to measure universal values such as inclusion, appreciation and tolerance. Therefore, it is unclear if the Universalism scale tapped into broad societal values related to egalitarianism, or individual

commitment to egalitarianism in a modern context. As such, individuals who did not personally endorse gender equality, but valued universalism more broadly could have still scored relatively high in Universalism due to social desirability. In fact, a disproportionate amount of participants scored relatively high in universalism, creating a skewed distribution skewed. As such, it was difficult to categorize individuals as "egalitarian" based on the Universalism scale. Therefore, future studies should look into developing new measures capturing egalitarianism, which produce normally distributed data

Conclusion

This work examines the effects of construal level on self-control conflicts in a new domain: receiving feedback about prejudice, such as sexism. The study suggests that people low in egalitarian beliefs experience a self-control conflict when confronted with an opportunity to put their sexist beliefs to the test. More specifically, in high-level construal, low egalitarians have significantly more interest in taking a sexism assessment compared to low-level construal. Ultimately, this study suggests that construal level may be another avenue through which researchers can encourage people who are sexist to confront their sexism. As such, construal-level manipulations should be used in future research investigating prejudice interventions to see if construal level is impactful in other domains.

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